1116-VM-1072 **Kokum R. De Silva*** (kdesilva@vols.utk.edu), **Shigetoshi Eda** and **Suzanne Lenhart**. *A model of Johne's disease with the disease transmission through the environment.* Preliminary report.

Johne's disease is a bacterial infection caused by Mycobacterium avium subspecies paratuberculosis (MAP). It is a chronic, progressive, and infectious disease which has a long incubation period and probably not curable. One main problem with the disease is the reduction of milk production in infected dairy cows. In our study we develop a deterministic model to describe the dynamics of the Johne's disease in a dairy farm. In this model we use a system of ordinary differential equations to describe the behavior of Johne's disease among dairy cows considering the progression of the disease and the age structure of the cows. We analyze the behavior of the Johne's disease by taking the environmental persistence of the bacteria into account. (Received September 16, 2015)